The Evening Sky Map

FREE* EACH MONTH FOR YOU TO EXPLORE, LEARN & ENJOY THE NIGHT SKY

WWW.SKYMAPS.COM

NORTHERN HEMISPHERE
APRIL 2013

Sky Calendar – April 2013

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April is Global Astronomy Month. Created by Astronomers Without Borders in 2010 to build on the International Year of Astronomy 2009. More info at: http://www.gam-awb.org/

3 **Last Quarter Moon** at 4:38 UT.

10 **New Moon** at 9:38 UT. Start of lunation 1117.

13 **Moon near the Pleiades** (evening sky) at 14h UT.

14 **Moon near Aldebaran** (evening sky) at 10h UT.

14 **Moon near Jupiter** (49° from Sun, evening sky) at 20h UT. Mag. –2.0.

15 **Moon at apogee** (farthest from Earth) at 22h UT (distance 404,862 km; angular size 29.5').

18 **Mars at conjunction** with the Sun at 0h UT. Mars passes into the morning sky.

18 **First Quarter Moon** at 12:31 UT.

19 **Moon near Beehive cluster** (M44) (evening sky) at 5h UT.

21 **Moon near Regulus** (evening sky) at 1h UT.

22 **Lyrid meteor shower** peaks at 11:30 UT. Active April 16-25. Radiant is between Hercules and Lyra. Expect 10 to 20 bright, fast meteors per hour at its peak. Unfavorable viewing conditions this year due to strong moonlight.

25 **Moon very near Spica** (169° from Sun, evening sky) at 0h UT. Occultation visible from southern Africa and NE South America.

25 **Full Moon** at 19:59 UT.

25 **Partial Eclipse of the Moon** from 18:03 to 22:11 UT, mid-eclipse at 20:09 UT. Only a tiny sliver of the Moon will be covered by the Earth's umbral shadow at maximum eclipse. Visible from much of the Eastern Hemisphere.

26 **Moon near Saturn** (midnight sky) at 0h UT. Mag. +0.1.

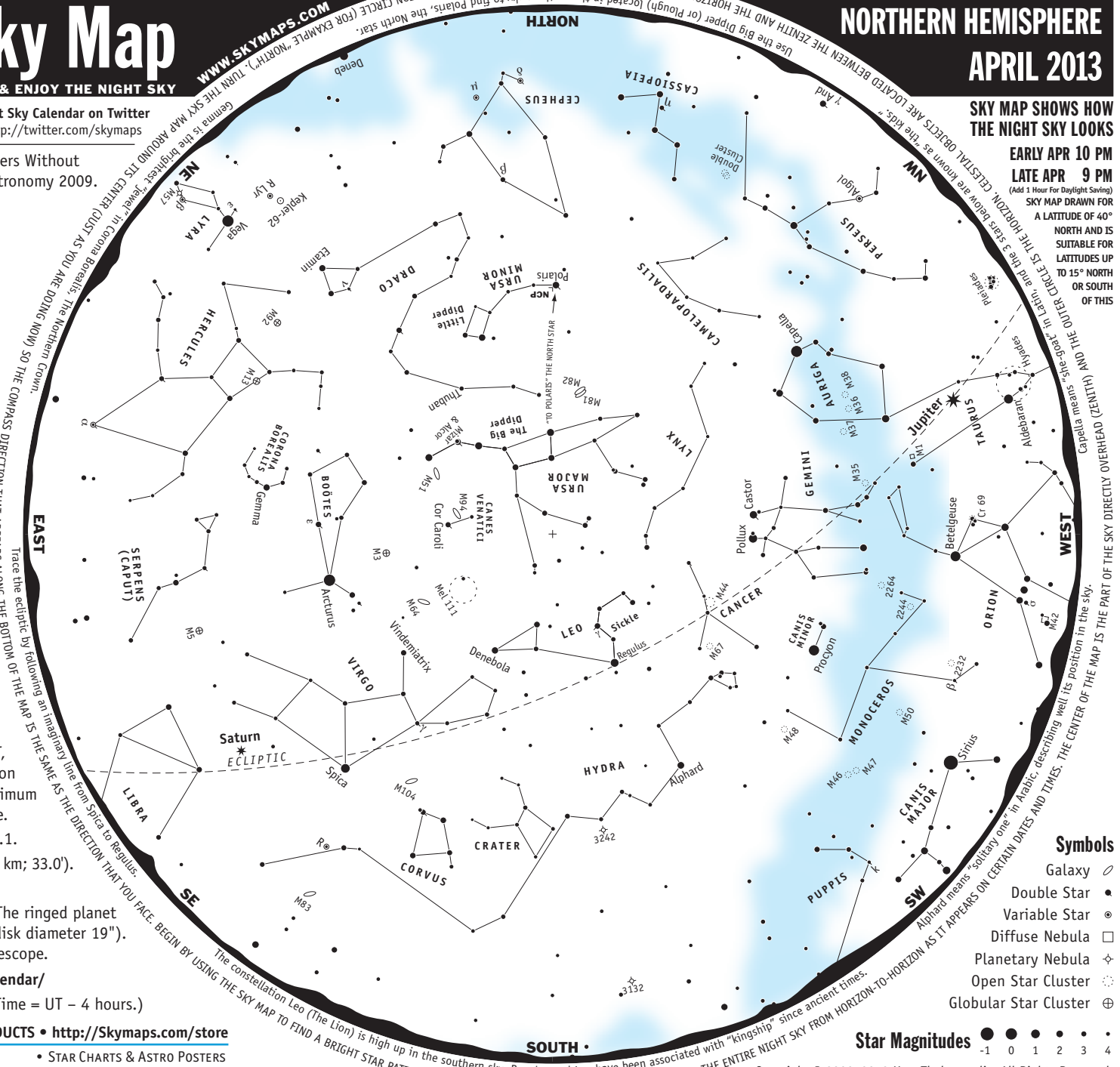
27 **Moon at perigee** (closest to Earth) at 20h UT (362,268 km; 33.0').

28 **Moon near Antares** (morning sky) at 2h UT.

28 **Saturn at opposition** (opposite the Sun) at 8h UT. The ringed planet is at its brightest (mag. +0.1) and closest all year (disk diameter 19"). Saturn's rings appear spectacular even in a small telescope.

More sky events and links at http://Skymaps.com/skycalendar/

All times in Universal Time (UT). (USA Eastern Summer Time = UT – 4 hours.)



Symbols

Galaxy
Double Star
Variable Star
Diffuse Nebula
Planetary Nebula
Open Star Cluster
Globular Star Cluster

Star Magnitudes -1 0 1 2 3 4

SKY MAP SHOWS HOW THE NIGHT SKY LOOKS

EARLY APR 10 PM
LATE APR 9 PM
(Add 1 Hour For Daylight Saving)

SKY MAP DRAWN FOR A LATITUDE OF 40° NORTH AND IS SUITABLE FOR LATITUDES UP TO 15° NORTH OR SOUTH OF THIS

SAVE ON RECOMMENDED PRODUCTS • http://Skymaps.com/store

- Star Atlases & Planispheres
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- Telescopes & Binoculars

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INSTRUCTIONS: THE SKY MAP SHOWS THE ENTIRE NIGHT SKY FROM HORIZON-TO-HORIZON AS IT APPEARS ON CERTAIN DATES AND TIMES.

About the Celestial Objects

Listed on this page are several of the brighter, more interesting celestial objects visible in the evening sky this month (refer to the monthly sky map). The objects are grouped into three categories. Those that can be easily seen with the naked eye (that is, without optical aid), those easily seen with binoculars, and those requiring a telescope to be appreciated. **Note, all of the objects (except single stars) will appear more impressive when viewed through a telescope or very large binoculars.** They are grouped in this way to highlight objects that can be seen using the optical equipment that may be available to the star gazer.

Tips for Observing the Night Sky

When observing the night sky, and in particular deep-sky objects such as star clusters, nebulae, and galaxies, it's always best to observe from a dark location. Avoid direct light from street lights and other sources. If possible observe from a dark location away from the light pollution that surrounds many of today's large cities.

You will see more stars after your eyes adapt to the darkness—usually about 10 to 20 minutes after you go outside. Also, if you need to use a torch to view the sky map, cover the light bulb with red cellophane. This will preserve your dark vision.

Finally, even though the Moon is one of the most stunning objects to view through a telescope, its light is so bright that it brightens the sky and makes many of the fainter objects very difficult to see. So try to observe the evening sky on moonless nights around either New Moon or Last Quarter.

Astronomical Glossary

Conjunction – An alignment of two celestial bodies such that they present the least angular separation as viewed from Earth.

Constellation – A defined area of the sky containing a star pattern.

Diffuse Nebula – A cloud of gas illuminated by nearby stars.

Double Star – Two stars that appear close to each other in the sky; either linked by gravity so that they orbit each other (binary star) or lying at different distances from Earth (optical double). Apparent separation of stars is given in seconds of arc (").

Ecliptic – The path of the Sun's center on the celestial sphere as seen from Earth.

Elongation – The angular separation of two celestial bodies. For Mercury and Venus the greatest elongation occurs when they are at their most angular distance from the Sun as viewed from Earth.

Galaxy – A mass of up to several billion stars held together by gravity.

Globular Star Cluster – A ball-shaped group of several thousand old stars.

Light Year (ly) – The distance a beam of light travels at 300,000 km/sec in one year.

Magnitude – The brightness of a celestial object as it appears in the sky.

Open Star Cluster – A group of tens or hundreds of relatively young stars.

Opposition – When a celestial body is opposite the Sun in the sky.

Planetary Nebula – The remnants of a shell of gas blown off by a star.

Universal Time (UT) – A time system used by astronomers. Also known as Greenwich Mean Time. USA Eastern Standard Time (for example, New York) is 5 hours behind UT.

Variable Star – A star that changes brightness over a period of time.

CELESTIAL OBJECTS

NORTHERN HEMISPHERE
APRIL 2013

Skymaps.com

Easily Seen with the Naked Eye

Capella	Aur	●	The 6th brightest star. Appears yellowish in color. Spectroscopic binary. Dist=42 ly.
Arcturus	Boo	●	Orange, giant K star. Name means "bear watcher". Dist=36.7 ly.
Sirius	CMa	●	The brightest star in the sky. Also known as the "Dog Star". Dist=8.6 ly.
Procyon	CMi	●	Greek name meaning "before the dog" - rises before Sirius (northern latitudes). Dist=11.4 ly.
Castor	Gem	◔	Multiple star system with 6 components. 3 stars visible in telescope. Dist=52 ly.
Pollux	Gem	●	With Castor, the twin sons of Leda in classical mythology. Dist=34 ly.
Regulus	Leo	●	Brightest star in Leo. A blue-white star with at least 1 companion. Dist=77 ly.
Vega	Lyr	●	The 5th brightest star in the sky. A blue-white star. Dist=25.0 ly.
Betelgeuse	Ori	●	One of the largest red supergiant stars known. Diameter=300 times that of Sun. Dist=430 ly.
Algol	Per	◉	Famous eclipsing binary star. Magnitude varies between 2.1 & 3.4 over 2.867 days.
Aldebaran	Tau	●	Brightest star in Taurus. It is not associated with the Hyades star cluster. Dist=66.7 ly.
Polaris	UMi	◔	The North Pole Star. A telescope reveals an unrelated mag 8 companion star. Dist = 433 ly.
Spica	Vir	●	Latin name means "ear of wheat" and shown held in Virgo's left hand. Dist=250 ly.

Easily Seen with Binoculars

M38	Aur	☼	Stars appear arranged in "pi" or cross shape. Dist=4,300 ly.
M36	Aur	☼	About half size of M38. Located in rich Milky Way star field. Dist=4,100 ly.
M37	Aur	☼	Very fine star cluster. Discovered by Messier in 1764. Dist=4,400 ly.
M44	Cnc	☼	Praesepe or Beehive Cluster. Visible to the naked eye. Dist=590±20 ly.
M3	CVn	⊕	Easy to find in binoculars. Might be glimpsed with the naked eye.
Mel 111	Com	☼	Coma Berenices. 80 mag 5-6 stars in 5 deg. Dist=283 ly. Age=400 million years.
M39	Cyg	☼	May be visible to the naked eye under good conditions. Dist=900 ly.
ν Draconis	Dra	◔	Wide pair of white stars. One of the finest binocular pairs in the sky. Dist=100 ly.
M35	Gem	☼	Fine open cluster located near foot of the twin Castor. Dist=2,800 ly.
M13	Her	⊕	Best globular in northern skies. Discovered by Halley in 1714. Dist=23,000 ly.
M92	Her	⊕	Fainter and smaller than M13. Use a telescope to resolve its stars.
M48	Hya	☼	12+ stars in 7x binoculars. Triangular asterism near centre. Dist=1,990 ly.
R Hydrae	Hya	◉	Long period variable. Mag varies between 3.0 & 11.0 over 390 days. Brilliant red.
R Lyrae	Lyr	◉	Semi-regular variable. Magnitude varies between 3.9 & 5.0 over 46.0 days.
2232	Mon	☼	A large scattered star cluster of 20 stars. Dist=1,300 ly.
2244	Mon	☼	Surrounded by the rather faint Rosette Nebula. Dist=5,540 ly.
M50	Mon	☼	Visible with binoculars. Telescope reveals individual stars. Dist=3,000 ly.
Cr 69	Ori	☼	Lambda Orionis Cluster. Dist=1,630 ly.
Double Cluster	Per	☼	Double Cluster in Perseus. NGC 869 & 884. Excellent in binoculars. Dist=7,300 ly.
M47	Pup	☼	Bright star cluster. 15+ stars in 7x binoculars. Dist=1,500 ly.
M46	Pup	☼	Dist=5,400 ly. Contains planetary NGC 2438 (Mag 11, d=65") - not associated.
M5	Ser	⊕	Fine globular star cluster. Telescope will reveal individual stars. Dist=25,000 ly.
Mizar & Alcor	UMa	◔	Good eyesight or binoculars reveals 2 stars. Not a binary. Mizar has a mag 4 companion.

Telescopic Objects

ε Boötis	Boo	◔	Red giant star (mag 2.5) with a blue-green mag 4.9 companion. Sep=2.8". Difficult to split.
M67	Cnc	☼	Contains 500+ stars mag 10 & fainter. One of the oldest clusters. Dist=2,350 ly.
M94	CVn	⌀	Compact nearly face-on spiral galaxy. Dist=15 million ly.
M51	CVn	⌀	Whirlpool Galaxy. First recognised to have spiral structure. Dist=25 million ly.
η Cassiopeiae	Cas	◔	Yellow star mag 3.4 & orange star mag 7.5. Dist=19 ly. Orbit=480 years. Sep=12".
M64	Com	⌀	Black-Eye Galaxy. Discovered by J.E. Bode in 1775 - "a small, nebulous star".
3242	Hya	✧	Ghost of Jupiter. Bright blue disk. Mag 11 central star. Dist=2,600 ly.
M83	Hya	⌀	Classic face-on spiral. Discovered in 1752 by Lacaille. In attractive star field.
γ Leonis	Leo	◔	Superb pair of golden-yellow giant stars. Mags 2.2 & 3.5. Orbit=600 years. Sep=4.4".
β Monocerotis	Mon	◔	Triple star. Mags 4.6, 5.0 & 5.4. Requires telescope to view arc-shape. Sep=7.3".
2264	Mon	☼	Christmas Tree Cluster. Associated with the Cone Nebula. Dist=2,450 ly.
M1	Tau	□	Crab Nebula. Remnant from supernova which was visible in 1054. Dist=6,500 ly.
M81	UMa	⌀	Beautiful spiral galaxy visible with binoculars. Easy to see in a telescope.
M82	UMa	⌀	Close to M81 but much fainter and smaller.
3132	Vel	✧	One of the brightest planetaries. Magnitude 10 central star. Dist=2,600 ly.
M104	Vir	⌀	Sombrero Galaxy. Almost edge-on spiral galaxy. Protruding central core.
γ Virginis	Vir	◔	Superb pair of mag 3.5 yellow-white stars. Orbit=169 years. At their closest in 2005.

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